



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/689,953	10/22/2003	Eberhard Gralla	32860-000634/US	4049
30596	7590	04/12/2007	EXAMINER	
HARNESS, DICKEY & PIERCE, P.L.C.			KIM, TAE JUN	
P.O.BOX 8910			ART UNIT	PAPER NUMBER
RESTON, VA 20195			3746	
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		04/12/2007	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/689,953	GRALLA, EBERHARD	
	Examiner	Art Unit	
	Ted Kim	3746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 11 March 2004.
 2a) This action is FINAL. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-23 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 1-23 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on 11 March 2004 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
 3) Information Disclosure Statement(s) (PTO/SB/08)
 Paper No(s)/Mail Date 10/22/2003.

4) Interview Summary (PTO-413)
 Paper No(s)/Mail Date. _____.
 5) Notice of Informal Patent Application
 6) Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 2, 4, 6, 8, 18, 19, 21, 23 are rejected under 35 U.S.C. 102(b) as being anticipated by Pfenninger (4,094,747). Pfenninger teaches a gas and steam power plant for water desalination (see Fig. 2), comprising: a heat recovery boiler 5 into which hot exhaust gas from a gas turbine is directable and by which at least one of process and auxiliary steam for a steam turbine 7 is adapted to be generated by heat exchange utilizing heat energy contained in the exhaust gas, wherein a heat exchanger surface 12 is arranged in the region of a cold end of the heat recovery boiler and for heating water to be desalinated from 15, is adapted to receive at least a partial quantity of the water to be desalinated and is adapted to be heated by heat exchange with the exhaust gas. A system for water desalination, comprising: means for receiving hot exhaust gas 5 from a gas turbine and for generating, by heat exchange utilizing heat energy contained in the exhaust gas, at least one of process and auxiliary steam for a steam turbine 7, wherein a relatively cold end of the means 12 is adapted to receive at least a partial quantity of the water to be desalinated and is adapted to heat the water by heat exchange with the exhaust gas. The heat exchanger surface 12 is a last heat exchanger surface in the heat

recovery boiler in the direction of flow of the exhaust gas; wherein the heat recovery boiler is fired 24.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pfenninger (4,094,747) and Vakil et al (6,173,563) and optionally Schwarzott (WO0208577- see US 6,823,674 for citations). Pfenninger teaches the claimed invention except for the outlet temperature of the exhaust gas from the heat recovery boiler is about 80 °C and the temperature of the exhaust gas before the heat exchange with the heat exchanger surface is within the range of between about 120 °C and 150 °C. Pfenninger does teach that with his steam generator, the temperature of the exhaust gas before the heat exchange with the heat exchanger surface is within the range of between about 180 °C - 200 °C (see col. 1, last line and following). Pfenninger's boiler section 6 involves only a single stage 6. Vakil et al teach a heat recovery steam generator with multiple stages and pressures for the steam generator, i.e. the HP and LP stages, and a heat exchanger (NH₃/H₂O vaporizer) at the cold end of the boiler. The use of the multiple stages rather than a single stage, as employed by Pfenninger, results in greater

thermodynamic efficiency and lower losses (col. 1, lines 45-57) as well as a lower exhaust gas temperature due to the increased efficiency of thermal recovery in the heat recovery steam generator. The temperature of the exhaust gas exiting the steam generator section and before the heat exchange with the heat exchanger surface (NH₃/H₂O vaporizer) is about 300 °F (148 °C) [see col. 5, lines 46 and following] and the temperature range exiting the heat recovery boiler is about 80 °C [185 °F is taught, which is 85 °C which is *about* the claimed temperature]. Alternately, Schwarzott teaches the typical range of the temperature range exiting the heat recovery boiler is about 80 °C [i.e. 70 to 100 °C is fairly taught, col 1, lines 43-50]. It would have been obvious to one of ordinary skill in the art to replace the single stage steam generation of Pfenninger, with multiple stage steam generation as taught by Vakil et al, which will have the claimed temperature ranges, due to the increased efficiency of thermal recovery in the heat recovery steam generator. Alternately, it would have been obvious to employ the claimed range of about 80 °C exiting the boiler, as taught by Schwarzott, as the typical range encountered in the art.

Contact Information

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Ted Kim whose telephone number is 571-272-4829. The Examiner can be reached on regular business hours before 5:00 pm, Monday to Thursday and every other Friday.

The fax number for the organization where this application is assigned is 571-273-8300.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ehud Gartenberg, can be reached at 571-272-4828. Alternate inquiries to Technology Center 3700 can be made via 571-272-3700.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). General inquiries can also be directed to the Patents Assistance Center whose telephone number is 800-786-9199. Furthermore, a variety of online resources are available at <http://www.uspto.gov/main/patents.htm>

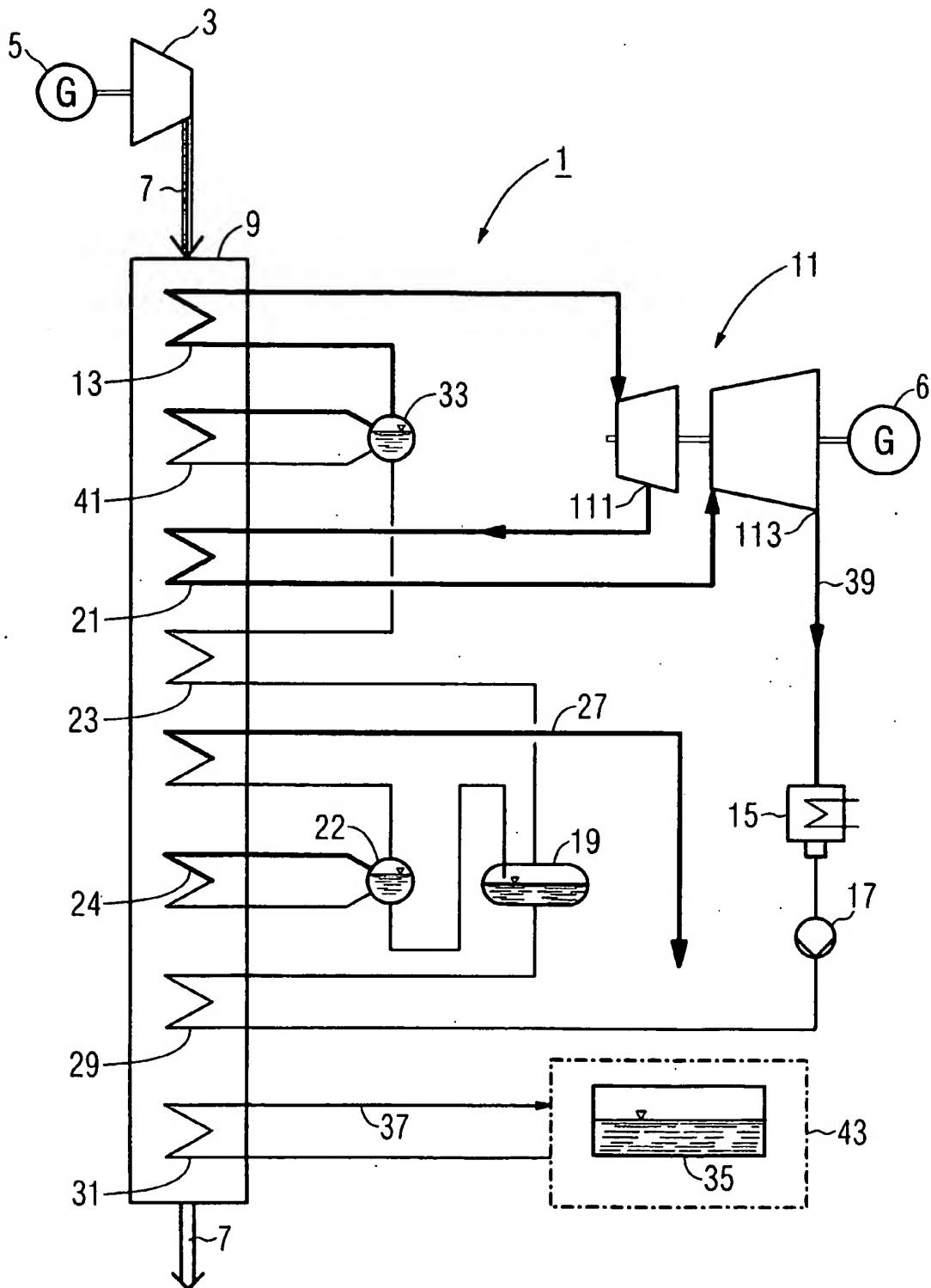
DK

Ted Kim	Telephone	571-272-4829
Primary Examiner	Fax (Regular)	571-273-8300
March 28, 2007	Fax (After Final)	571-273-8300
Technology Center 3700	Telephone	571-272-3700

200215190

REPLACEMENT DRAWINGS

1/1



Entry
Approved
m
3/27/07